OFFICE OF HEALTH PROGRAMS
OPERATING PLAN

ENVIRONMENT, SAFETY AND HEALTH
U.S. DEPARTMENT OF ENERGY
GERMANTOWN, MARYLAND

MARCH 2001

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INTRODUCTION

Welcome! I appreciate your interest in the Office of Health Programs (OHP). In the pages that follow, we describe our work, its purpose, and its products. The objective of this operating plan is to give you, the taxpaying public, a description and accounting of how your money is spent.

The OHP is the result of a July 2000 reorganization under the Deputy Assistant Secretary for Health Programs that consolidated four offices into one. This "flattening" of the previous organization simplifies the management structure and is based on a corporate business model. The change has strengthened significantly our strategic capabilities, improved communications, enhanced competitiveness, and increased our responsiveness and focus.

The 2001 edition of the operating plan contains a number of program-level goals. These program-level goals, tied directly to the office's mission, serve to leverage the public's assets, promote competition, encourage new agendas and technologies, and measure productivity.

I hope you find time to familiarize yourself with our work. I believe it is a vital part of the Government's effort to evaluate and communicate the impact of the Department of Energy's (DOE) operations on workers and people in the surrounding communities.

I welcome your suggestions and comments.

Frank Hawkins
Chief Operating Officer

MISSION

To evaluate and communicate the impact of DOE operations, past and present, on workers and communities.

The mission statement conveys our purpose.

FUNCTION

The OHP creates, collects, uses, and disseminates health-related information.

The function statement expresses how we accomplish our mission.

CORE VALUES

Communication

- Open
- Direct
- Listening
- Take and give constructive feedback

Character

- Tolerance
- Integrity
- Honesty
- Commitment
- Value the differences
- Non-duplicity
- Think win-win

Courtesy

- Respect others
- Treat others as equals

Core values express the way we conduct ourselves. These core values reflect those personal and professional attributes that are most important to us as individuals.

BUSINESS PRINCIPLES

Plan

- Plan strategically
- Set expectations
- Promote collaboration
- Encourage innovation
- Minimize duplication
- Promote competition
- Conduct peer review

Perform

- Facilitate and support work
- Demand accountability
- Leverage assets

Evaluate

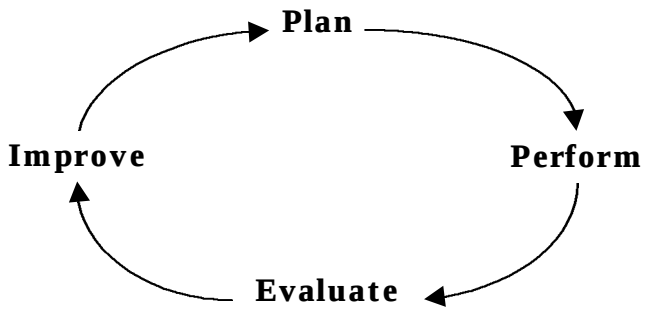
- Monitor progress
- Measure productivity
- Conduct peer review
- Acknowledge success

Improve

- Benchmark similar work
- Encourage innovation
- Promote collaboration
- Promote competition

Business principles are actionable ideas that guide program direction and priorities.

Business Lifecycle



ADVISORY COMMITTEES AND PEER REVIEW

The OHP uses a broad range of peer reviewers to evaluate the scientific and technical merit of research proposals and to eliminate the potential for selection bias on the part of the department. The OHP primarily uses peer review on a prospective (pre-award) basis in the review of proposals submitted in response to solicitations for research published in the Federal Register. This is done pursuant to the goals of Title 10, Code of Federal Regulations Part 602 (10 CFR 602) to ensure that the best experts are available to conduct technical evaluations and will also ensure independent and credible review of applications.

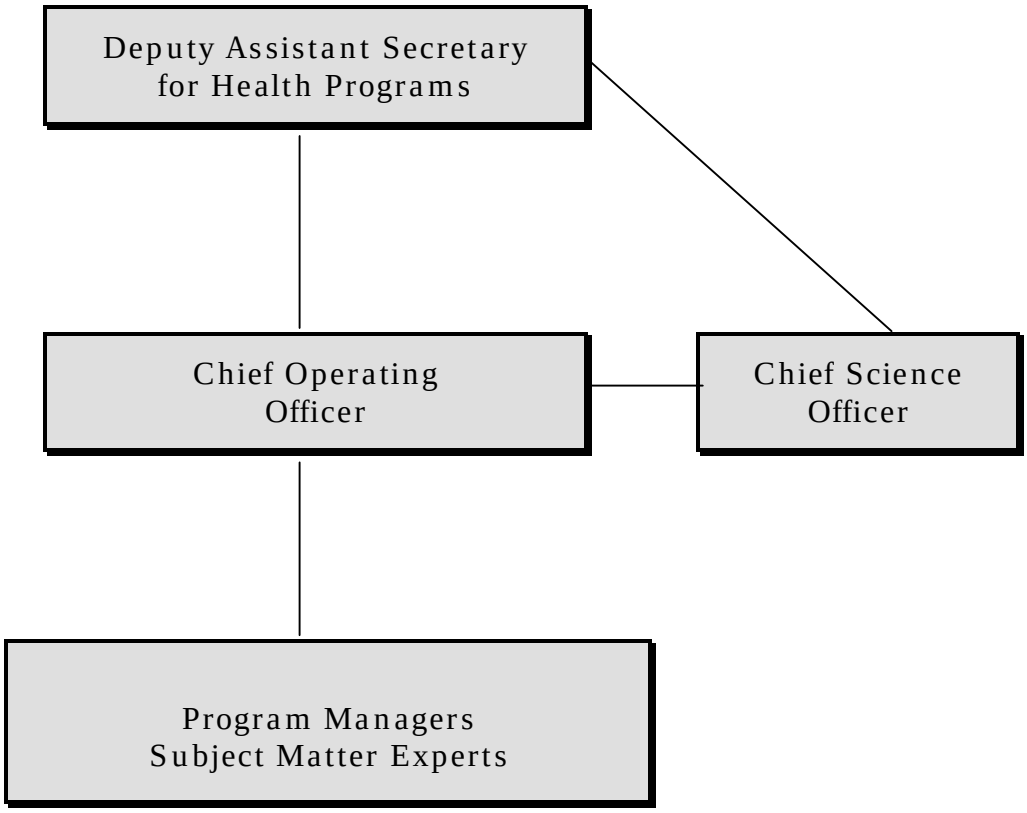
For research in progress, many projects funded by OHP use standing advisory committees for conducting post award or retrospective reviews, some of which fall under the rules of the Federal Advisory Committee Act (FACA) of 1972. For example, the Department of Health and Human Services (HHS) Advisory Committee on Energy Related Epidemiologic Research provides advice to HHS on projects conducted for DOE by that agency, as well as the site specific advisory boards at various DOE sites.

Also, the Government Performance and Results Act (GPRA) of 1993 requires Government agencies to develop strategic plans and to measure and report on the results of their activities, including measuring and evaluating funded scientific research. Thus, similar standing advisory groups provide advice for research in Russia under the auspices of the Joint Coordinating Committee for Radiation Effects Research, and a bi-national Science Council provides advice to the Radiation Effects Research Foundation, Japan, regarding the scientific agenda for the A-bomb survivor studies. Medical surveillance projects under the Former Workers Medical Surveillance Program and the Rocky Flats Former Radiation Worker Medical Surveillance project are each guided by local advisory committees. The U.S. Transuranium and Uranium Registries at Washington State University, similarly, receive guidance by an advisory committee of scientific, worker, and public representatives.

In addition, the office uses public and worker meetings, workshops, a formal comment process (generally announced in the Federal Register), and ongoing dialogue with interested individuals and organizations, to ensure that it receives regular, substantive input from its stakeholders.

Lastly, all research funded by DOE through grantees undergoes review by an Institutional Review Board to ensure the protection of human subjects. The Federal policy for the protection of human subjects, also called the Common Rule, is codified under Title 10, Code of Federal Regulations, Part 745 (10 CFR 745) for DOE (10 CFR 45 for HHS).

FUNCTIONAL ORGANIZATION CHART



The OHP is staffed with approximately 30 employees, each with special skills and competencies that enable OHP to carry out day-to-day business. The classic multi-tiered hierarchy found in many large long-established organizations, such as the Government, has been cast aside for a more streamlined and efficient model used by corporate business. This change has significantly strengthened OHP's strategic capabilities, improved communications, enhanced competitiveness, and increased responsiveness and focus.

The line organization within OHP consists of the Deputy Assistant Secretary, the Chief Operating Officer, and the staff. Staff-level personnel consist of program managers and subject matter experts. Because of the highly technical and scientific nature of OHP work, the line organization is augmented with a special advisory expert, the Chief Science Officer. Major roles and responsibilities for these jobs are as follows:

The *Deputy Assistant Secretary* serves as OHP's advocate; promulgates office-wide policy and direction; and provides resources and infrastructure.

The *Chief Operating Officer* implements policies and direction; and directs daily business, staffing, and budget.

The *Chief Science Officer* serves as principle scientific advisor to the Deputy Assistant Secretary; develops and proposes policy and direction; and ensures a cohesive, coordinated, and prioritized health studies program.

Program Managers communicate guidance and direction to contractors and grantees; provide work objectives and verify they are properly reflected in program-management plans and statements of work; develop and use performance measures; ensure that contracted-for work stays within budget; and initiate program improvements to ensure efficient and cost-effective implementation.

Subject Matter Experts provide authoritative program-related expert advice and counsel; identify and recommend program improvements; identify and promote new or key research/technology for OHP use; act as technical liaison with Government and industry; and, where applicable, produce analytical material for peer-reviewed publication based on OHP-related work.

STRATEGIC OUTLOOK

The Strategic Outlook consists of the Strategic View and the Strategic Response. The Strategic View captures the internal and external environments that influence OHP policy, direction, and routine decision-making. The Strategic Response lays out a proposed path to success given the realities of the environment.

STRATEGIC VIEW

- The DOE operations pose many potential health risks to its workers and to the communities surrounding its facilities.

- Currently, two out of every three DOE Office of Environment, Safety and Health (ES&H) program dollars is spent for health studies work.

- The OHP focuses substantial resources on understanding the health consequences of exposures to ionizing radiation and the health impacts of DOE operations on workers and communities.

- OHP's mission and role is not widely understood.

- We work in an emotionally charged environment, characterized by mistrust and lack of credibility in the eyes of some workers and members of the public.

- Decentralizing ES&H responsibility and outsourcing ES&H functions pose challenges to collecting and communicating health-related information and providing cost-effective health services.

STRATEGIC RESPONSE

The DOE OHP is uniquely positioned in terms of expertise and resources to make substantive contributions toward understanding the health consequences of exposures to ionizing radiation and the health impacts of DOE operations on workers and communities. Understanding what information is available, how to and who will use it, and whether it can answer the health-related questions germane to protecting the health of the DOE workforce and communities surrounding its sites is the challenge the OHP faces. The measure of the value of OHP information is its influence on public health decision-making and, ultimately, its impact on improving the health of DOE workers and the community.

Collaboration and communication with the workers, people in the surrounding communities, and other DOE operating elements is imperative to understand their different and sometimes competing perspectives and needs. It is incumbent on OHP to reach out to these people and organizations, establish points of contact, openly share our collective knowledge, collaborate to find common ground, and balance our work products accordingly.

The content and results of many OHP programs affect people at a personal level. The intense interest in and reactions to these programs is heightened by the suspicion and distrust fostered, in part, by decades of nuclear secrecy. Building bridges to workers and communities, and developing meaningful partnerships and collaborative programs with other agencies, labor unions, academia and citizen's groups are essential to the credibility of our programs. It requires that OHP actively reach out to these groups across the country. Continuing DOE's policy of openness is paramount. OHP must have clarity of purpose and deliver an assertive, consistent message grounded in public health principles based on the best available, independently peer-reviewed science. We must share information and knowledge in an open and straightforward way, and address misunderstandings and misinformation directly with the best available information.

Changing business practices within the Department influence OHP goals and strategies. The OHP must be flexible, anticipating and adapting to changes outside of its control. OHP must respond constructively to new initiatives, including integrated safety management, and the outsourcing and decentralization of safety and health functions. To be most influential, OHP must be part of the change process, joining and influencing the process from within. OHP can improve the change process by bringing its own technical expertise and knowledge gained from benchmarking against programs in the private sector.

Key to long-term OHP success will be its ability to provide leadership in a changing environment. OHP will respond to change using good communication, transparency and consistency of purpose, openness, and flexibility.

PORTFOLIO

The OHP portfolio is divided into *core* and *ancillary* programs, with a total budget of approximately $67 million in fiscal year (FY) 2001. Core programs are mission-related and expressly designed to evaluate and communicate the impact of DOE operations on workers and communities. Core programs consist of health-related basic research and targeted surveillance projects for workers and communities near DOE sites. They are the OHP's first priority. Ancillary programs enhance and enable core program implementation. As shown in Figure 1, 98 percent of the OHP budget implements the core program. The remaining 2 percent of the budget support the ancillary programs.

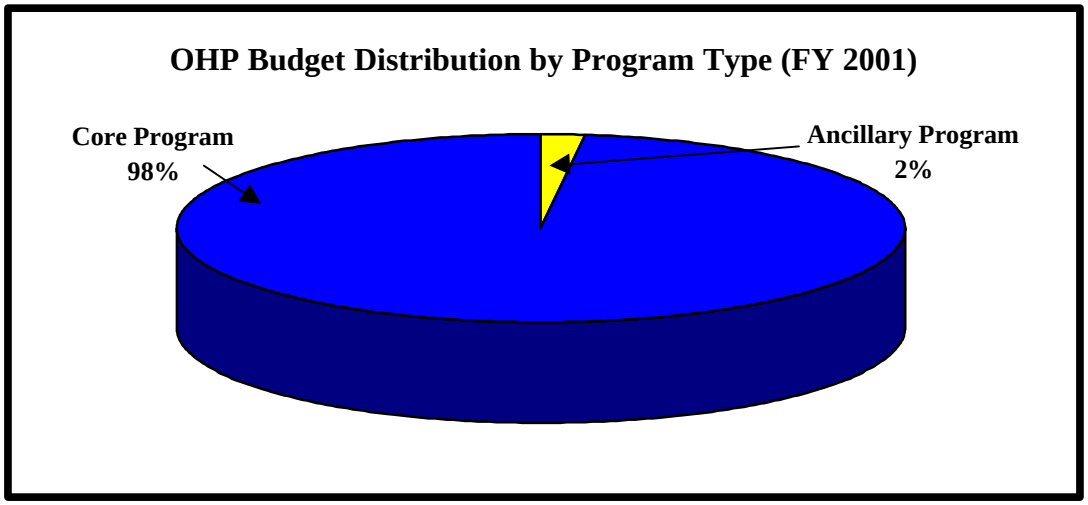


Figure 1

In addition to OHP-funded work, there are a number of major worker-related projects at DOE that address workers' concerns, such as the creation of the Office of Worker Advocacy and workers' compensation legislation. Funding for these important DOE-wide initiatives are not reflected in the OHP budget, but comprise a substantial monetary commitment to the health, safety, and well-being of DOE workers.

CORE PROGRAMS

The Core Programs are designed to give as complete a picture as possible of the health effects of DOE operations on workers and the public living near DOE sites. They are divided into either **research or surveillance**, depending on the nature of the work. The techniques employed are rooted in basic public health philosophy and techniques, including epidemiology, occupational and environmental health, health physics, and industrial hygiene. Figure 2, below, displays the percentage of OHP's 2001 core program budget dedicated to either research or surveillance activities.

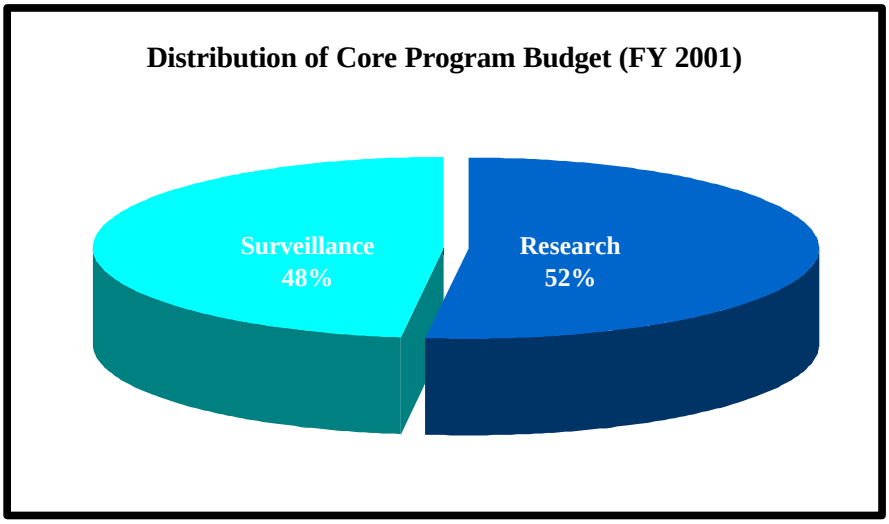


Figure 2

RESEARCH

OHP research programs provide information on the long-term health effects from past occupational or environmental exposures to DOE workers and people living in communities surrounding DOE sites. Fifty-two percent of the core program budget is allocated for research. As shown in Figure 3, below, about one-third of that money is used to conduct studies of nuclear workers (worker research) and two-thirds is spent to study communities impacted by DOE's operations (community research).

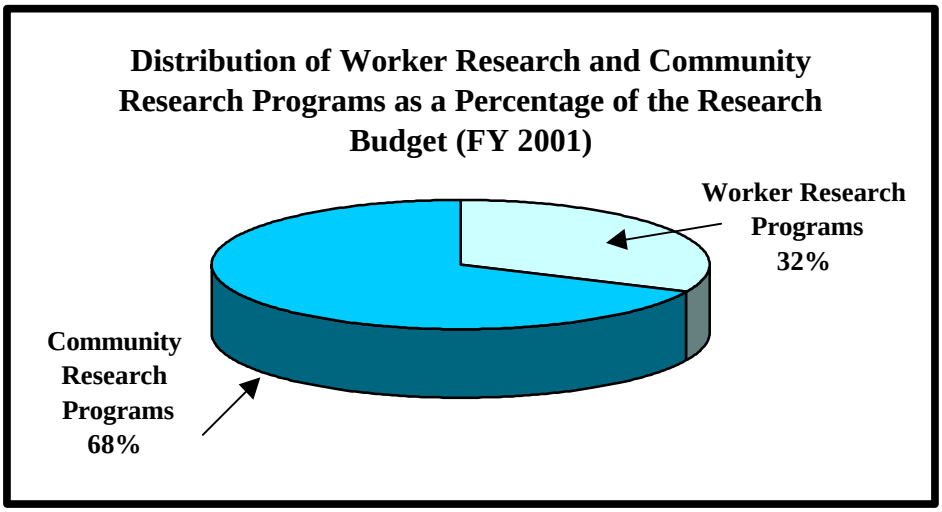


Figure 3

WORKER RESEARCH: The primary focus of our research on worker health is the men and women who worked at DOE facilities. Our research programs provide information on the long-term health impacts experienced by DOE workers. Studies of DOE workers began in the 1960's due to concerns about radiation exposure, and have continued uninterrupted to this day. To supplement the information we obtain from studies of DOE workers, OHP also supports research on the health effects of radiation exposure among workers in the Russian nuclear weapons complex and workers who were involved in the cleanup of the Chernobyl nuclear reactor. Our worker research programs include the Public Health Activities with HHS, U.S. Transuranium and Uranium Registries, Russian Health Effects Studies, and the Chernobyl Health Effects Studies.

WORKER RESEARCH PROGRAMS

PUBLIC HEALTH ACTIVITIES WITH THE DEPARTMENT OF HEALTH AND HUMAN SERVICES

Through a Memorandum of Understanding (MOU) with the Department of Health and Human Services (HHS), DOE funds a program of independent research studies and other public health activities by HHS to improve our understanding the consequences of exposures to ionizing radiation and other hazardous materials used in DOE operations on workers and communities.

Within HHS, the National Institute for Occupational Safety and Health (NIOSH) conducts occupational epidemiology studies of workers at DOE sites. Since 1990, when the MOU was implemented, NIOSH has undertaken studies of workers at seven DOE sites. There are approximately 600,000 current and former workers at DOE nuclear weapons complex sites. The basic goal is to conduct mortality and cancer incidence studies of workers at the various sites. The goal is realized using four strategies. The first strategy is to conduct new cohort mortality and morbidity studies of sites not previously studied. The second strategy is to update existing cohort mortality and morbidity studies with more recent deaths and cases. The third strategy is to conduct single and multi-site in-depth studies of a single cause of death or condition. The fourth is to refine research methods that improve on the information developed from the first three strategies. NIOSH conducts some DOE worker health studies outside the scope of the MOU with HHS (Program). Some of these studies are funded with program dollars at the discretion of the Director of NIOSH and the DOE Assistant Secretary for ES&H; they currently support eight projects in this manner. These include studies of uranium miners and millers, civilian workers at the Portsmouth Navy shipyard, and workers at the Portsmouth Gaseous Diffusion Plant. These also include projects identified as part of the NIOSH National Occupational Research Agenda.

GOALS**:**

- Develop a 5-year research plan.
- Complete the NIOSH Portsmouth and Pantex cohort mortality studies.
- Develop a communication plan to improve coordination among HHS agencies.

ACCOMPLISHMENTS**:**

- Published the “Health Agenda for Public Health Activities at U.S. DOE Sites for FY 1999-2000.”
- New MOU signed by the Secretary of Energy and Secretary of HHS.

- NIOSH researchers completed three major studies: multiple myeloma in DOE workforce; mortality among female nuclear weapons workers; and a study on the impact of downsizing and reorganization.

Program Manager: Marsha Lawn

U.S. TRANSURANIUM AND URANIUM REGISTRIES

The U.S. Transuranium and Uranium Registries (USTUR) are a unique program of human tissue research. The Registries are a major component of DOE's long-standing programs to ensure that radiological protection standards and workplace control measures for occupational exposures to plutonium, uranium and other long-lived, radioactive materials are protective of worker health.

Based on voluntary enrollment of occupationally exposed individuals, the USTUR program has become a unique resource of data, radioanalytical capabilities, and research materials. The Registries includes the operation of two catalogued repositories, the National Human Radiobiology Tissue Repository and the National Radiobiology Archive of Tissues from animal studies, to ensure that donated tissues and histopathology slides are available for use by researchers. Analysis of the distribution of radioactive elements in the tissues donated posthumously by volunteers, provides critical information about the quantity of radioactive material deposited in each tissue and organ, the length of time that the material remained there, and the radiation doses received by organs and systems. These data are essential to our ability to verify and refine the of the world's radiation protection standards. For example, during the past 30 years, 370 USTUR cases have donated about 5,000 autopsy samples that were analyzed for isotopes of uranium, plutonium, thorium, and americium. This resulted in more than 15,000 analytical measurements, which formed the basis for more than 150 in peer-reviewed articles and reports. These data and materials make the USTUR a major resource for understanding plutonium health effects. Regulators, managers, and risk estimators rely on these models and standards to make informed decisions.

GOALS**:**

- Perform radiochemical analyses of donated tissue.
- Publish results to help evaluate the validity of predicted doses based on current models, preserve tissues for future research.
- Provide information concerning internal dosimetry of radioactive metals, particularly in relation to the Employee Compensation Legislation.

- Evaluate validity of biokinetic models for actinides, and support international and domestic efforts of OHP.
- Perform the archival and collaborative services of the National Human Radiobiology Tissue Repository and the National Radiobiological Repository and facilitate access to these collections.

ACCOMPLISHMENTS**:**

- Performed core operational tasks, including arranging for eight autopsies.
- Performed about 600 radiochemical analyses.
- Collected and entered registrant exposure and health information into the USTUR database.
- Developed library of donated tissues, histopathology slides, and similar materials from animals for use by researchers worldwide.
- Published the USTUR annual progress report, transmitted an annual newsletter to registrants, and hosted the annual meeting of the USTUR Advisory Committee.
- Made presentations at five scientific meetings, had two papers published and prepared two manuscripts for submission to peer-reviewed journals.

Program Manager: Barbara Brooks

RUSSIAN HEALTH EFFECTS STUDIES

The Russia Program supports studies aimed at developing a better understanding the impact of radiation exposures on the health of people in the Southern Ural mountains of Russia who worked at the MAYAK plutonium production facility and those who lived along the Techa River. The workers at the MAYAK production facility are known to have occupational exposures similar exposures as the DOE workers, although often at total doses substantially higher than experienced by workers in the United States. Knowledge gained from studies of MAYAK workers help us to better understand radiation health effects in U.S. workers.

This work is conducted under the auspices of the Joint Coordinating Committee for Radiation Effects Research (JCCRER). The JCCRER was initiated in under an Agreement in 1994 and the Agreement was renewed in March 2000 by U.S. Federal agencies and Russian Federation ministries. The goal of the program is to study health effects in populations exposed to chronic low-dose rate radiation as a result of nuclear weapons production in the Russian Federation. DOE is the U.S. lead agency and the Ministry for Civil Defense Affairs, Emergencies and

Elimination of Consequences of Natural Disasters (EMERCOM) is the Russian lead agency.

The focus of occupational studies to date has been workers exposed to radiation emitted from MAYAK, the first Russian nuclear weapons production plant. Joint DOE-Russian funded efforts are conducted in dose reconstruction, epidemiology, molecular biology/biomarkers, and tissue banks. Additionally, under the JCCRER Agreement, the Nuclear Regulatory Commission (NRC) funds a study on deterministic effects of occupational exposure to radiation, and the National Cancer Institute (NCI) conducts studies on cancer mortality in Russian workers.

All studies are conducted jointly, with both a U.S. and a Russian principal investigator, with the bulk of the work conducted in Russia. DOE provides support through direct funding to the U.S. and Russian teams, and Russian ministries provide support in kind through making available personnel, facilities, etc.

GOALS:

- Conduct an analysis of health-research priorities and needs and draft recommendations for the research agenda to cover the next 5-10 years of the joint U.S.-Russian health studies program. These plans will include an evaluation of data on MAYAK, Krasnoyarsk, and Tomsk nuclear production sites for possible consideration to be included in future studies.
- Expand the role of the Russian JCCRER Executive Committee and the newly formed Russian Scientific Review Group (SRG) in the solicitation and review of proposed work, including the acceptance for review, of proposals from Russian scientific institutions.
- Establish a new project to integrate the numerous MAYAK-worker databases to facilitate future studies.
- Complete the initial phase of the worker dosimetry project, and develop a plan for future activities related to worker dosimetry needs.
- Expand the tissue repository collection to include blood from MAYAK-worker cohort members currently residing in Ozersk.
- Continue to work with NCI, NRC, and Russian Federation Directorates and Institutions to ensure integration of epidemiologic and dose reconstruction studies among all agencies in both countries participating in the JCCRER.

ACCOMPLISHMENTS:

- Established a Russian tissue repository to include archived, autopsied tissues.

- Funded two new feasibility studies in the Russian Federation: 1) molecular markers of lung cancer, and 2) biomarkers of alpha radiation exposure.
- Initiated long-term efforts in lung micro-dosimetry.
- Among 25 articles published in 2000, out of the work in the joint U.S-Russian program, were two landmark papers: "Liver Cancers in Mayak Workers" Gilbert ES, Koshurnikova NA, Sokolnikov M,et al; and "Bone Cancers in Mayak Workers" Koshurnikova NA, Gilbert ES, Sokolnikov M, et al. These study results are being used to establish worker protection standards.
- Publication of a special issue of Health Physics that contained articles exclusively about the joint U.S.– Russian studies in the Southern Urals.

Program Manager: Claudia Beach

CHERNOBYL HEALTH EFFECTS STUDIES

The explosion at the Chernobyl Nuclear Power Plant in northern Ukraine is considered to be the worst nuclear accident in that 50 tons of radioactive dust were dispersed over 140,000 square miles of Belarus, Ukraine, and Russia, and 4.9 million people were estimated to have been exposed to radiation. In addition to the general population, 600,000 to 800,000 Ukrainian clean-up workers, referred to as "liquidators," were exposed. These workers took part in abating the radioactive contamination at the site. Of these, 130,000 liquidators are in the Ukrainian State Chernobyl Registry.

The Chernobyl Health Effects Studies were originally established on April 26, 1988, through a bilateral agreement between the Untied States and the former Soviet Union to study the health consequences of the Chernobyl accident on April 26, 1986. After the dissolution of the Soviet Union, the United States signed separate agreements with Belarus and Ukraine to continue these projects.

Two international projects are underway which focus on the adverse health effects of the clean-up operations in Ukrainian liquidators: a cataract study, sponsored by DOE; and a leukemia study, co-sponsored with NCI.

The purpose of the cataract study is to determine the incidence of radiation-induced (posterior subcapsular) cataract formation in 12,000 Ukrainian liquidators in the Ukrainian State Chernobyl Registry who served between April 26, 1986 and February 28, 1987. In addition, the

study contains a nested case-control analysis of 1,000 cases and matching controls to assess the distribution of radiation-induced cataracts as a function of dose. This is the largest study of radiation-induced ocular cataracts ever conducted in a population with individual estimates of radiation exposure. The study is in its sixth and final year.

The purpose of the leukemia study is to examine the relationship between exposure to ionizing radiation and the incidence of leukemia, lymphoma, and related blood disorders. The Phase I pilot study began in 1996 and was completed in 2000. Because of insufficient statistical power to detect cases of lymphoma, it was decided to exclude lymphoma from Phase II and to focus on leukemia, multiple myeloma, and myelodysplasia. Phase II is a case-control study of approximately 100,000 liquidators in the Ukrainian State Chernobyl Registry who first worked in the 30 km Chernobyl exclusion zone between April 26, 1986 and December 31, 1991, and who were resident at the time of registration in Kiev or one of five Ukrainian Oblasts. Phase II is scheduled to begin in FY 2001.

By its size, dose distribution, and accessibility, the Chernobyl population presents an unparalleled opportunity to consider both risk issues and modalities for monitoring populations at risk. These studies are expected to produce risk coefficients for thyroid cancer relative to radiation. This information will fill a major gap in the world's knowledge of radiation effects, and will provide guidance for radiation protection and public health policies near operating nuclear reactors.

GOALS:

- For FY 2001, the goals for the final year of the cataract study are to complete the second round of examinations for the entire cohort; complete the first round of retrospective dosimetry for the cohort; complete the data entry of questionnaires from the cohort study and the nested case-control study; complete data analyses; and prepare a final report.
- For FY 2001, the goals of the first year of Phase II of the leukemia study are to identify the cohort through the Ukrainian State Chernobyl Registry and to begin to identify cases of leukemia, multiple myeloma, and myelodysplasia and form a leukemia registry from all available records in the study area.

ACCOMPLISHMENTS:

- For the cataract study, each of the 12,000 subjects has had an initial eye examination; over half has had a second examination. For the nested case-control study, 1,196 cases and an equal number of controls have been identified.

- For the leukemia study, the Phase I pilot study conducted in Dnipropetrovsk Oblast determined that 90 percent of liquidators had a medical examination within the past 3 years as recorded on the State Chernobyl Registry. A sample of 47 liquidators was chosen for interviews and feasibility of dosimetry questionnaires and blood work; 66 percent responded. The protocol for Phase II was approved by NCI's Chernobyl Oversight Panel and by NCI's Institutional Review Board. Consent of local health officials was obtained, sources of data on leukemia cases were identified, and local staff was selected.

Program Manager: Barry Fountos

COMMUNITY RESEARCH: The OHP research program is also designed to determine the health impact of DOE operations on residents living near DOE facilities. These studies focus on environmental exposures (through ground water, soil, and the air) as a result of offsite contamination. Studies are underway, or have been completed, at all major DOE sites. OHP supplements this research with studies of communities living near the Russian nuclear weapons complex at MAYAK, residents of the regions around Chernobyl, and the Japanese survivors of the atomic bomb blasts at Hiroshima and Nagasaki. Our community research programs include the Public Health Activities with HHS, Russian Community Studies, Chernobyl Health Effects Studies, and the Japanese A-Bomb Survivor Studies.

COMMUNITY RESEARCH PROGRAMS

PUBLIC HEALTH ACTIVITIES WITH HHS

Through an MOU with HHS, DOE funds a program of independent research studies and other public health activities to improve our understanding the consequences of exposures to ionizing radiation and other hazardous materials used in DOE operations on workers and communities.

Under the MOU, within HHS, the National Center for Environmental Health conducts community-based historical dose reconstruction projects and community epidemiology studies related to ionizing radiation and offsite chemical releases that may have impacted the health of members of communities surrounding selected DOE sites. Since 1990, when the MOU was implemented, offsite historical dose reconstruction studies have been completed at Hanford Reservation and Fernald. Similar studies are now underway at Idaho National Engineering and Environmental Laboratory (INEEL), Savannah River Site

(SRS), and Los Alamos National Laboratory (LANL). In a separate DOE program, historical offsite dose reconstruction studies were completed at Oak Ridge Reservation and Rocky Flats Plant. With the completion of the ongoing NCEH studies, offsite dose reconstruction studies will have been completed at all major DOE sites. Other activities include radiation studies grants and cooperative agreements for educational activities.

GOALS:

- Completion of National Academy of Sciences' review of INEEL Dose Reconstruction Phase I.
- Coordinate and facilitate the completion of SRS and LANL dose reconstruction projects.
- Implement an updated version of the Access Handbook to improve the conduct of studies and public health activities.
- Publish initial INEEL Public Health Assessment.
- Development of a 5-year research plan.
- Develop a communication plan to improve coordination among agencies.

ACCOMPLISHMENTS:

- Published the "Health Agenda for Public Health Activities at U.S. DOE Sites for FY 1999-2000."
- New MOU signed by the Secretary of Energy and Secretary of HHS.
- Completion of INEEL Dose Reconstruction Phase I.
- Data from the Hanford Environmental Dose Reconstruction project was used by the States of Washington, Idaho, and Oregon to conduct an Individual Dose Assessment, that provided individual radiation dose estimates to citizens who have lived in the three-state area affected by Hanford's radiation releases.

Program Manager: Marsha Lawn

RUSSIAN COMMUNITY STUDIES

The community component of the Russia Program supports studies aimed at understanding the impact of radiation on the health of community members who lived along the Techa River in the Southern Ural mountains of Russia. The Techa River was contaminated by effluents from the MAYAK facilities disposed of in large quantities. The people who lived along the Techa River are known to have environmental exposures substantially higher than among similar populations exposed to radioactive waste in the United States. Knowledge gained from studies of the Techa River population should result in better understanding of the effects of radiation exposures on community populations.

This work is conducted under the auspices of the Joint Coordinating Committee for Radiation Effects Research (JCCRER). The JCCRER was initiated in under an Agreement in 1994 and the Agreement was renewed in March 2000 by U.S. Federal agencies and Russian Federation ministries. The goal of the program is to study health effects in community populations exposed to chronic low-dose rate radiation as a result of nuclear weapons production in the Russian Federation. DOE is the U.S. lead agency and the Ministry for Civil Defense Affairs, Emergencies and Elimination of Consequences of Natural Disasters (EMERCOM) is the Russian lead agency.

All studies are conducted jointly, with both a U.S. and a Russian principal investigator, with the bulk of the work conducted in Russia. DOE provides support through direct funding to the U.S. and Russian teams. The Russian Federation ministries provide support in kind through making available personnel, facilities, etc., and NCI conducts studies on cancer mortality in Russian populations and thyroid diseases in children.

GOALS:

- Conduct an analysis of health-research priorities and needs and draft recommendations for the research agenda to cover the next 5-10 years of the joint U.S.-Russian health studies program. These plans will include an evaluation of data on residents living near to nuclear production facilities at Krasnoyarsk and Tomsk for possible inclusion in future studies.
- Expand the role of the Russian JCCRER Executive Committee and the Russian SRG in the solicitation and review of proposed work, including the acceptance for review, of proposals from Russian scientific institutions.
- Continue to work with NCI, NRC, and Russian Federation Directorates and Institutions to ensure integration of epidemiologic and dose reconstruction studies among all agencies in both countries participating in the JCCRER.

ACCOMPLISHMENTS:

- Publication of a special issue of Health Physics that contained articles exclusively about the joint U.S.– Russian studies in the Southern Urals.
- Initiated new uncertainty work on the ongoing population dose reconstruction study.
- Initiated radiation risk analysis phase of the ongoing population cancer incidence study.

Program Manager: Claudia Beach

CHERNOBYL HEALTH EFFECTS STUDIES

The explosion at the Chernobyl Nuclear Power Plant in northern Ukraine is considered to be the worst nuclear accident in that 50 tons of radioactive dust were dispersed over 140,000 square miles of Belarus, Ukraine, and Russia, and 4.9 million people were estimated to have been exposed to radiation. In addition to the general population, 600,000 to 800,000 Ukrainian clean-up workers, referred to as "liquidators," were exposed. These workers took part in abating the radioactive contamination at the site. Of these, 130,000 liquidators are in the Ukrainian State Chernobyl Registry.

The Chernobyl Health Effects Studies were originally established on April 26, 1988, through a bilateral agreement between the United States and the former Soviet Union to study the health consequences of the Chernobyl accident on April 26, 1986. After the dissolution of the Soviet Union, the United States signed separate agreements with Belarus and Ukraine to continue these projects.

Since 1987, researchers observed large increases in the incidence of childhood thyroid cancer in the populations of both Belarus and Ukraine among those exposed to higher levels of radioiodine. The thyroid cancers appear to be more prevalent in those aged 0-5 at the time of the accident and in areas determined to be more heavily contaminated with I^{131}. Parallel international projects are underway which focus on thyroid cancer in populations of Belarus and Ukraine. These are co-sponsored with NCI.

The purpose of these 30-year studies is to estimate the early and late structural and functional changes in the thyroid glands in 12,000 Belarussians and 12,000 Ukrainians who were less than 19 at the time of the Chernobyl accident. All study participants had their thyroid glands measured for radioactivity following the accident.

By its size, dose distribution, and accessibility, the Chernobyl population presents an unparalleled opportunity to consider both risk issues and modalities for monitoring populations at risk. These studies are expected to produce risk coefficients for cataracts and leukemia relative to radiation. This information will fill a major gap in the world's knowledge of radiation effects, and will provide guidance for radiation protection and public health policies near operating nuclear reactors.

GOALS:

- Recruit and assemble the 12,000-subject cohort in each country from those with direct measurements of gamma radiation emitted from the thyroid glands taken at the time of the accident.
- Conduct clinical exams to document the appearance of thyroid cancer and thyroid diseases.
- Establish mobile screening units to conduct exams outside of clinical screening centers.
- Administer a dosimetry questionnaire at the time of thyroid screening to assess contributing, as well as confounding factors, such as potassium iodide tablets and milk consumption, on thyroid disease.
- Refine the dose estimates to the thyroid glands.
- Input and analyze data to link ages, gender, confounders, and estimated doses to the thyroid estimation database and prepare a report.
- Continue to follow the cohort and repeat the screening process after each subject has been screened for the first time.

ACCOMPLISHMENTS:

- In Belarus, as of September 30, 2000, current addresses were found for 22,942 out of 38,725 potential study subjects. As of September 30, 2000, 35 thyroid cancers and 9 benign thyroid neoplasms were detected out of 9,404 screened subjects. Data entry for screened subjects is 86 percent completed.
- In Ukraine, as of August 31, 2000, current addresses were found for 16,904 out of 32,572 potential study subjects. As of September 30, 2000, 18 thyroid cancers and 6 benign thyroid neoplasms were detected out of 10,953 screened subjects. Data entry for screened subjects is nearly completed.

Program Manager: Barry Fountos

JAPANESE A-BOMB SURVIVOR STUDIES

DOE is committed to the support of the atomic bomb survivor studies at the Radiation Effects Research Foundation (RERF) in Hiroshima and Nagasaki, Japan, as long as valuable health effects information is to be gained by further followup of the survivors. The main RERF study that is used for determining risk of mortality, cancer, and other diseases is the Life Span Study. Through a co-funding agreement with the Japanese Government, DOE is supporting the completion of the Life Span Study and any ancillary studies, which would strengthen the relationships between radiation dose and incidence of cancer. For example, this would include studies of molecular markers in specimens from the atomic

bomb survivors, and physical and biological dosimetry studies needed to determine individual radiation doses. The program is supported by the exchange of Letters between Japanese and U.S. Governments establishing the RERF, December 27, 1974; Act of Endowment of the RERF, 1975, with supplementary provisions, last revision July 1, 1997; Records of Discussion between DOE and the Japanese Ministry of Health and Welfare, June 21, 1996, and June 20, 2000.

The Atomic Bomb Casualty Commission (ABCC), funded by the U.S. Atomic Energy Commission initiated studies on the effects of radiation exposure in survivors of the atomic bombings in Hiroshima and Nagasaki in 1947. In 1975, RERF was established under Japanese law as full successor to the ABCC and was designated to continue the research. The Act of Endowment states that the objective of the RERF is "to conduct research and studies, for peaceful purposes, on medical effects of radiation on man and on diseases which may be affected by radiation, with a view to contributing to the maintenance of the health and welfare of atomic bomb survivors and to the enhancement of the health of all mankind." Annual funding for the RERF is provided by the Japanese Ministry of Health, Labor and Welfare (MHLW) and DOE. Through a cooperative agreement, the Board on Radiation Effects Research of the National Academy of Sciences (NAS) supports RERF activities.

The RERF research program focuses on epidemiologic studies of mortality and cancer incidence in the Life Span Study cohort and the in-utero cohort, as well as genetic and mechanistic studies. Other clinical studies (Adult Health Studies) and followup studies on the children of the survivors (F_1 studies) are financially supported by MHLW, since they are regarded as relief measures for the A-bomb survivors.

The results of RERF research are the primary basis for radiation protection standards throughout the world. The radiation risk estimates rely on a dosimetry system developed in 1986 (DS86). Emphasis during 2001 will be on the reassessment of DS-86. It is anticipated that these dosimetric studies will be completed by the end of the year and will be reviewed and documented by a Joint U.S.-Japanese Working Group on the Reassessment of A-bomb Dosimetry.

GOALS:

- Focus the cooperative agreement between the NAS and DOE on activities in the area of RERF staff recruitment, communications, and A-bomb dosimetry that will result in the successful completion of the Life Span Study and related studies on health effects of radiation in the A-bomb survivor population.

- With DOE and MHLW funding and guidance, U.S. Working Group on Reassessment of A-bomb Dosimetry in collaboration with Japanese Working Group will complete the science, undertake reanalysis of DS86, and begin report writing.
- Conduct special session at Health Physics Society Meeting on re-assessment of A-bomb dosimetry in order to communicate with the scientific/technical community plans and progress in this area.

ACCOMPLISHMENTS**:**

- Finalized a 5-year agreement with the MHLW on the management and funding of the RERF.
- Developed a plan together with the DOE Office of Science, the NAS, and the MHLW on the completion of needed atomic bomb dosimetry studies, including timeline, research tasks (LANL, LLNL, ORNL, Utah, SAIC, RERF and Japanese laboratories), and funding responsibilities.
- RERF scientists continued to publish major papers on radiation health effects. Published data indicate: increased solid cancer incidence in survivors not only exposed to high radiation doses, but also doses lower than 0.1 Sv; increasing trends for diseases of the circulatory, digestive and respiratory systems in exposed individuals, although rates were considerably smaller compared to cancer incidence; median loss of life among all exposed survivors was about 4 months; other risks factors may have a role in cancer development in A-bomb survivors, such as estradiol levels in breast cancer and vegetable and fruit consumption in bladder cancer. An increasing number of non-RERF scientists have re-analyzed RERF data resulting in alternate models for consideration in cancer risk assessments.

Program Manager: Joe Weiss

SURVEILLANCE

OHP health surveillance activities are designed to identify patterns of illness and injury among persons exposed to radiation or other hazardous materials or adverse conditions. Surveillance results provide an opportunity to apply intervention strategies to reduce disease. These strategies may include new regulations to decrease exposure to hazardous substances (such as the case of beryllium), or medical screening to detect disease at early stages when it may be more responsive to therapeutic intervention. Forty-eight percent of the core program budget is dedicated to surveillance programs. As shown in Figure 4, below, 55 percent of surveillance funding is designated for worker surveillance and 45 percent allocated for community surveillance activities.

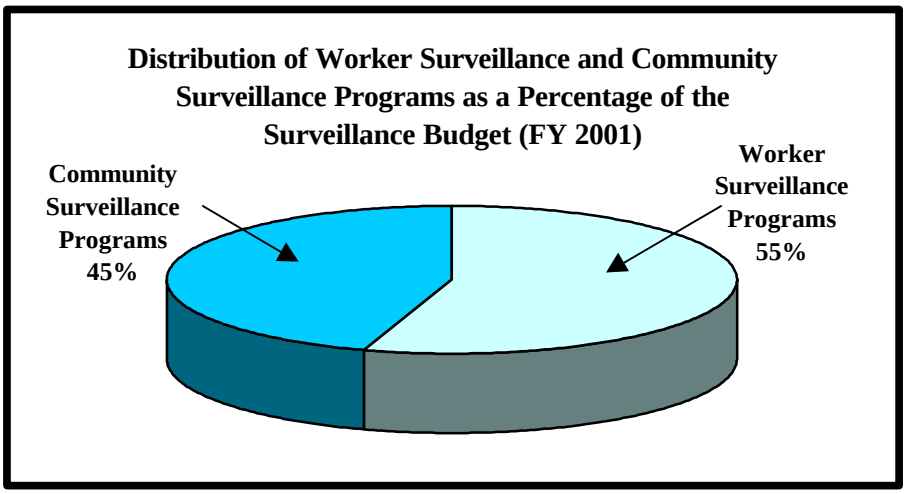


Figure 4

WORKER SURVEILLANCE: The primary emphasis of worker health surveillance is the identification of workers whose health may have been affected by their work at DOE facilities and the provision of timely health information to those workers. An array of voluntary screening programs conduct either broad assessments of the health of former workers or focus on the identification of workers at risk for specific health effects, such as berylliosis. These programs offer medical tests and evaluations selected to provide valuable health information directly to former workers concerned with the potential health impact of their work. Other health surveillance programs monitor of the health of current workers and to assist DOE sites in investigating worker health concerns. Ongoing analysis of health data from 70,000 current workers is used to identify trends in illness and injury, providing workers, management, and other stakeholders with current information on the health of the current work force. Worker surveillance programs includes a complex-wide Beryllium Registry and screening program, the Rocky Flats Former Radiation Workers' Program, a number of former workers' medical screening programs, and the Epidemiologic Surveillance Program.

WORKER SURVEILLANCE PROGRAMS

EPIDEMIOLOGIC SURVEILLANCE PROGRAM

DOE has the legislative authority to monitor the impact of its operations on the health of its workforce. Epidemiologic surveillance monitors the health of current workers at participating DOE sites. It responds directly to the office's mission by evaluating and communicating the potential

impact of DOE operations on current workers. Knowledge generated by this program enhances our understanding of the health of workers, and provides a mechanism by which worker health concerns can be addressed in collaboration with the affected workers, occupational medicine, and site management. Epidemiologic surveillance supports the DOE's only multi-site health information database linked to current workers. The program leverages existing health and safety data sources to maximize the use of current data, while limiting the fiscal burden related to data collection.

Epidemiologic surveillance assesses the overall health of the *current* DOE workforce at 11 DOE sites and facilities. The goal is to identify groups of workers that may be at increased risk for occupation-related injury and illness. In response to indications of excess risk, program staff can assess the need for additional investigations. Surveillance is based on continuous collection, analysis, and interpretation of selected morbidity, demographic, and occupational exposure data. The program is a corporate resource providing our customers with timely health information. We also provide epidemiologic and public health expertise in the evaluation of worker health concerns. Reports summarizing the results of epidemiologic surveillance are published annually and are available online. Implementation of epidemiologic surveillance has advanced the automation of health data management systems, at sites such as the INEEL, fostering the development of state-of-the-art medical information management.

GOALS**:**

- Continue to provide timely, comprehensive assessments of health trends among more than 70,000 current workers at 11 DOE sites and facilities.
- Conduct an independent assessment of the current program to further align and integrate it with overall OHP goals.
- Initiate integration of lifetime external ionizing radiation exposure data into health assessments of current workers.
- Expand dissemination of health data to workers, citizens advisory groups, state governments, and other stakeholders through presentations, publications, and internet-based information.
- Initiate at least one special project focusing on a significant aspect of worker health and safety.

ACCOMPLISHMENTS**:**

- Presented multi-year summary of workers' health status to Pantex workers and management, citizens' advisory board, and Texas State Department of Health officials. Presentations were met with strong support from stakeholders.

- Supported completion of New York State Cancer Registry's analysis of cancer among former and current Brookhaven National Laboratory workers. Final report is in preparation for presentations to workers, citizens' advisory board, and other stakeholders.
- Successfully integrated occupational injury and illness data from DOE's Computerized Accident/Incident Reporting System (CAIRS) program into epidemiologic surveillance analyses, furthering collaboration of epidemiologic surveillance with other ES&H health and safety programs.

Program Manager: Cliff Strader

FORMER WORKERS MEDICAL SURVEILLANCE PROGRAM

The Former Workers Medical Surveillance Program (FWP) supports the OHP mission and strategic response by evaluating the effect of DOE's past operations on the health of former DOE workers. External teams of health experts are funded to independently evaluate DOE site hazards and exposures, and offer medical screening to former workers who may be at significant risk for occupational diseases. The teams collect and evaluate available site and worker health information, and generate new data and findings on the relationship of site-specific worker exposures to long-term health. Data from these projects will be summarized and made available in DOE's Comprehensive Epidemiologic Data Resource (CEDR) database for use by other health researchers. Individual project final reports and a FWP summary will be made available to DOE workers, communities, and other interested parties.

In 1996, DOE implemented the FWP in response to respond to Public Law 102-84, Section 3162, that directed DOE to evaluate the long-term health conditions of former workers who may be at significant risk of occupational diseases due to their former employment at DOE sites. The FWP established three goals: 1) identify groups of workers at significant risk for occupational diseases; 2) notify members of these risk groups; and 3) provide medical screening to the at-risk workers that could lead to medical interventions. DOE used a competitive solicitation process to select site-specific projects that focused on groups of at-risk workers, such as production workers and construction workers. Twelve cooperative agreements were awarded to principal investigators that are affiliated with universities, schools of public health, and labor organizations. The projects were implemented in two phases. In phase I, a 1-year needs assessment was conducted. Based upon the results of the needs-assessment, groups of at-risk workers and site-specific exposures of concern were identified. In Phase II, members of the at-risk groups are

located, notified, and offered medical screening examinations for adverse health outcomes related to occupational exposures (such as beryllium, asbestos, silica, welding fumes, lead, cadmium, chromium and solvents). The medical screening phase can continue for up to 4 years. These projects are evaluating former workers at the following sites: Hanford Site, Nevada Test Site, Rocky Flats Environmental Technology Site, Portsmouth Gaseous Diffusion Plant, Paducah Gaseous Diffusion Plant, Oak Ridge Reservation, Savannah River Site, Idaho Engineering and Environmental Laboratory, Los Alamos National Laboratory, Amchitka Island, and the Iowa Army Ammunition Plant.

GOALS:

- Develop a proposal for a long-term and cost-effective program for identifying, notifying, and medically screening former workers at highest risk for occupational disease related to their work at sites across the DOE complex.
- Continue to identify, notify, and offer medical screening to between 5,500 and 6,500 additional former workers.
- Establish criteria for evaluating the ongoing 12 FWP pilot projects and begin to evaluate selected projects.
- Develop guidance for project-specific final reports and begin planning on ways to best summarize and distribute FWP findings to DOE workers, communities, and sites.

ACCOMPLISHMENTS:

- Ten projects actively screening former workers at nine sites across the DOE complex. Standardized reporting of medical findings initiated.
- Over 7,000 former workers screened to date, including approximately 3,000 former workers screened for beryllium sensitivity. Medical findings, health education, and assistance for needed medical follow-up provided to former workers.
- Implemented two new projects at Amchitka Island, Alaska, and Burlington, Iowa.
- In response to direction from the Secretary of Energy and the Assistant Secretary for ES&H, expanded the PACE Gaseous Diffusion Plant project to include current workers and add advanced medical technology for early detection of lung cancer.
- Provided significant support for the enactment of the Energy Employees Occupational Illness Compensation Program Act of 2000.

Program Manager: Kitty Taimi

FORMER BERYLLIUM WORKER MEDICAL SURVEILLANCE PROGRAM

The Former Beryllium Worker Medical Surveillance Program is designed to assess the health impacts of DOE operations on former employees thought to have worked with beryllium. Beryllium compounds are now recognized as a serious occupational hazard, and the OHP is working to identify and offer medical screening and diagnostic evaluations to former employees thought to be at risk for chronic beryllium disease (CBD). In these endeavors, OHP works closely with other departmental elements responsible for beryllium sensitivity screening and protection and control measures for current workers; compensation for individuals who have developed CBD; and related research to improve the prevention, diagnoses and treatment of CBD.

The OHP program offers medical examinations to former employees (retired and separated) who are at risk for CBD due to their work at DOE. Pilot efforts were originally established in 1991 at the Rocky Flats Environmental Technology Site and the Oak Ridge Y-12 Plant for both current and former employees. In 1998, all DOE sites were required to establish medical surveillance programs for current employees. The projects at Rocky Flats and Oak Ridge were, therefore, consolidated and redirected to offer medical examinations only to former employees at all DOE sites that had used beryllium.

Currently, the program is carried out under contract by the Oak Ridge Institute for Science and Education (ORISE). ORISE offers medical screening examinations, diagnostic evaluations to individuals with positive screening results, and medical care to those who have CBD, but are not eligible for workers' compensation coverage of their medical costs. The information generated by the program is managed and analyzed to determine the prevalence of CBD; determine distribution of CBD among former workers; generate hypotheses and stimulate research; and monitor changes and trends in disease prevalence.

Additionally, OHP supports a related effort to establish a Beryllium-Associated Worker Registry, which will assist DOE in understanding the effectiveness of efforts to reduce exposure to beryllium. The registry will contain data on DOE contractor and Federal workers, the jobs they performed while exposed to beryllium, results from screening tests for chronic beryllium disease, and the results from subsequent medical diagnostic procedures. Policy, guidelines, and directives for the registry are determined at DOE Headquarters by OHP. It will be maintained by the Beryllium Registry Data Center at ORISE. The expected implementation date for DOE sites is January 7, 2002.

GOALS:

- Continue the medical screening program for beryllium sensitivity and CBD among former beryllium exposed DOE workers, with the goal of 6,000 screening medical examinations and approximately 200 follow-on examinations.
- Provide analytical services for the Be LPT test and any needed clinical evaluations for approximately 6,700 FWP participants.
- Provide input to the development of a plan to counsel and assist employees in obtaining medical benefits.
- Pilot test the beryllium registry at the Y-12 Plant in Tennessee and Lawrence Livermore National Laboratory in California.

ACCOMPLISHMENTS:

- Provided more than 3,000 former beryllium worker program participants with medical examinations.
- Expanded the program to four new sites.
- Provided analytical services for the Be LPT test and clinical evaluations for over 3,000 FWP participants.
- Drafted a specification for Be LPTs for use in procurement by all departmental elements.
- Assisted in the development of the *Beryllium-Associated Worker Registry Data Collection and Management Guidance* document and initiated a beryllium registry data collection guidance document.

Program Manager: Libby White

ROCKY FLATS FORMER RADIATION WORKER MEDICAL SURVEILLANCE PROGRAM

The Rocky Flats Former Radiation Worker Medical Surveillance Program is one of three OHP activities that provide medical surveillance to former DOE workers. These programs fulfill the OHP mission to evaluate and communicate the impact of DOE operations, past and present, on its workers. This program helps comprise part of the OHP strategic response of making a substantive contribution toward understanding the health consequences of exposure to ionizing radiation on DOE workers.

This program provides medical examinations on a 3-year repeating cycle to former Rocky Flats workers with measurable internal deposition (due to wounds or inhalation), or a total effective dose equivalent (TEDE) of 20 rems or more. During the years of Rocky Flats Plant operations (1951-1989), several incidents (fires, explosions, etc.) resulted in external radiation exposures and/or internal depositions of plutonium, americium, and/or uranium in workers. This program began in 1980 as

a Rocky Flats health surveillance program. In 1992, OHP began supporting it as a formal pilot program.

GOALS:

- Review site records for retiring Rocky Flats workers in order to determine eligibility for program participation.
- Provide medical examinations to newly recruited eligible former workers in order to screen for health problems related to radiation exposure.
- Provide repeat (3-year) medical exams to former workers who are currently enrolled in the program.
- Prepare and submit for publication (as appropriate) reports that describe the program and the dosage levels that have been recorded for these workers.

ACCOMPLISHMENTS:

- Made transition in focus from dosimetry project to medical surveillance project.
- Conducted medical examinations of newly recruited eligible former workers and repeat medical examinations of former workers.

Program Manager: Janet Normandy

HUMAN RELIABILITY PROGRAM

OHP has the responsibility within the DOE Human Reliability Programs (HRP) to monitor worker health and fitness for duty through annual medical and psychological assessments. These programs are designed to evaluate individuals who apply for or occupy certain positions that are critical to our national security and worker and community safety. HRP individuals assigned to nuclear explosive duties are monitored at the work site to ensure that no emotional, mental or physical conditions exist that could result in an accidental or unauthorized detonation of nuclear explosives. The HRP evaluates that situation very carefully and then continues to monitor the HRP worker's ability to perform the job tasks in a safe and reliable manner. Through the continuous monitoring process, physicians and psychologists are asked to determine (1) if the worker is physically fit to perform assigned duties, (2) if the worker is mentally stable to perform duties without injuring anyone in the process, and (3) whether the worker is abusing drugs or alcohol.

OHP provides guidelines to assist site health care providers in answering such questions about reliability and mental stability. The HRP provides a thorough investigation of work history data by obtaining a lifestyle

history of an HRP employee entrusted by DOE to perform sensitive and critical work in relationship to protecting the national security. Annual training that emphasizes program requirements and specific issues including monitoring and surveillance of worker behavior and job performance is required for those in the HRP. OHP collaborates with the Office of Security and Emergency Operations in the development of Federal Rules and DOE standards and assures those standards are met.

GOALS:

- Coordinate the medical and psychological elements of the draft DOE HRP (proposed 10 CFR 712) for publication.
- Provide assistance on studies of the utility of using specific liver enzymes to determine alcohol abuse. This is a test that will help site contractor occupational physicians identify alcohol abusers.
- Initiate a study on the utility of using the Substance Abuse Subtle Screening Inventory as part of the worker's medical history questionnaire for fitness-for-duty with the DOE HRP.
- Develop and evaluate psychological support material for the clinical psychologists involved in the DOE HRP.

ACCOMPLISHMENTS:

- Developed requirements for the medical and psychological evaluations and related areas of OHP responsibilities for the Draft Proposed Federal Rule, *DOE Human Reliability Program, 10 CFR 712*. Processed responses to comments from DOE Elements and developed changes based on the DOE Office of General Counsel comments.
- Published a journal article on the *Occupational Medical Program Alcohol Screening: Utility of the CAGE and BMAST Inventories*.
- Prepared a Technical Report on the *Review of Currently Available Clinical Laboratory Tests to Detect and Monitor Alcohol Abuse*.

Program Manager: Ken Matthews

CONTRACTOR EMPLOYEE ASSISTANCE PROGRAM

The DOE Contractor Employee Assistance Program (EAP) complements the DOE's medical and psychological evaluations and surveillance program by providing employees who are experiencing personal problems an opportunity to receive appropriate treatment and support. Problems that adversely affect employee attendance, job performance, safety, and production are all related to the medical and behavioral elements of the worker surveillance program. EAP screening for diagnosis of a problem which is identified in early stages will tend to be more responsive to therapeutic intervention.

OHP has the responsibility for the medical and behavioral elements of the program. The logical reason for this is that it nicely complements other programs managed by OHP such as described in the HRP section. The goal of the EAP through the OHP medical and behavioral guidance process is to provide a conduit through which the individual can address and solve the issues confronted without fear of being penalized. This is done through consultation services, assessment, referral for treatment and/or rehabilitation, and education concerning substance abuse (i.e., illegal drug use, prescription drug abuse, alcohol abuse), or other medical-behavioral, mental, emotional, or personal problems of contractor employees and family members.

Most contractor EAP's are located within contractor occupational medical departments, some are located in human resource departments, and many have additional (offsite) EAPs.

The need to obtain and monitor the medical referrals to the EAP is critical to our understanding of this unique interaction and will allow us to better understand the unique role that medical programs provide in assessing a healthy workforce. OHP collaborates with the DOE Office of Contract and Resource Management to develop program requirements and standards for DOE Order 350.1, Chapter 9.

GOALS:

- Initiate development of standards for DOE contractor EAP's related to medical and behavioral elements of program responsibilities.

ACCOMPLISHMENTS:

- Developed a Directory of Employee Assistance Programs at DOE Contractor Sites.
- Established a resource of program accreditation through a national EAP accrediting organization, *The Employee Assistance Society of North America (EASNA).*
- Provided information on EAP accreditation to attendees at the FY 2000 DOE Occupational Medicine Conference, San Diego, California, including a presentation by the President of EASNA.

Program Manager: Ken Matthews

COMMUNITY SURVEILLANCE: Community surveillance programs comprise both domestic and international components to address the health concerns of residents living near DOE sites and members of the international community potentially affected by DOE-related activities. In response to public concern about the potential health impact on community residents living near DOE

sites, OHP's community surveillance addresses host communities' need for information about potential environmental exposures and independent health assessments. OHP has partnered with the Agency for Toxic Substances and Disease Registries (ATSDR) to provide these residents with independent public health expertise and information on environmental contamination and potential health impacts. With OHP support, communities receive health assessments and consultations, public and physician educational programs, and environmental monitoring. Registries have also been developed to address ongoing public concerns near sites such as Hanford. International efforts address the concerns of populations exposed to ionizing radiation from nuclear testing and environmental contamination through medical surveillance and environmental monitoring programs.

COMMUNITY SURVEILLANCE PROGRAMS

PUBLIC HEALTH ACTIVITIES WITH HHS

Through an MOU with HHS, DOE funds a program of independent research studies and other public health activities. These projects improve our understanding of the health consequences of exposures to workers and surrounding communities from ionizing radiation and other hazardous materials used in DOE operations.

Within HHS under the MOU, ATSDR has the mandate to conduct studies of communities located near Superfund sites to determine if exposure to contaminants in the environment resulted in adverse human health effects. Some DOE sites or facilities are classified as Superfund sites. ATSDR's mission is to prevent exposure and adverse health effects and diminished quality of life associated with exposure to hazardous substances from waste sites, unplanned releases, and other sources of pollution. ATSDR is required by the Superfund law to conduct health assessments at hazardous waste sites that are on or proposed for the National Priorities List (NPL). ATSDR conducts exposure investigations (via air, soil, water, biota, etc.) to determine if an exposure to a community has occurred and how the exposure may have affected the public's health. They also provide health education programs to health care providers in impacted communities, to residents, and to Native American tribes.

GOALS:

- Complete public health assessments at Fernald, Hanford, and Paducah.
- Initiate needs assessment and public health assessment at Oak Ridge.

- Continue collaboration between DOE and HHS agencies in setting long-term planning.
- Implement an updated version of the Access Handbook to improve the conduct of studies and public health activities.
- Develop a communication plan to improve coordination among HHS agencies.
- Continue environmental education to communities, tribes, and health care providers.

ACCOMPLISHMENTS:

- Published the "Health Agenda for Public Health Activities at U.S. DOE Sites for FY 1999-2000."
- New MOU between DOE and HHS agencies that included ATSDR.
- Published initial public health assessment at Fernald and Paducah.
- Published an environmental organically-bound tritium assessment at SRS and LLNL.

Program Manager: Marsha Lawn

MARSHALL ISLANDS MEDICAL SURVEILLANCE AND ENVIRONMENTAL MONITORING PROGRAM

The Marshall Islands Medical Surveillance and Environmental Monitoring Program is a response by DOE to the legacy of nuclear weapons testing in the Marshall Islands. As such, its purposes are to serve the personal medical needs of Islanders most impacted by the testing; contribute to the Islanders well-being through science-based resettlement strategies; and to understand the extent of the long-term health consequences of exposure to ionizing radiation. The program is supported by Public Law 99-239 (Compact of Free Association Act of 1986), Public Law 99-205, and Public Law 95-134.

The program provides special medical care to Rongelap and Utrik people exposed to radiation from the 1954 U.S. thermonuclear "Bravo" test and environmental monitoring to characterize the radioactivity remaining at the four affected atolls of Bikini, Enewetak, Rongelap, and Utrik.

GOALS:

- Improve the effectiveness of community-based year-round health care for DOE's Rongelap and Utrik patients.
- Provide new environmental monitoring and dose assessment information to support informed resettlement decisions by the Rongelap people.

- Continue dose assessment of workers and resettling populations using whole body counting and plutonium urinalysis techniques.

ACCOMPLISHMENTS:

- Concluded agreements to provide environmental and human monitoring services at Enewetak Island and the Rongelap Atoll. These agreements were designed to assist in making science-based decisions regarding the settlement and habitability of these places.
- Worked with the people of Rongelap to build their capacity to operate DOE provided whole body counting equipment at Rongelap Island.
- Developed new analytical technology to measure plutonium in the urine at levels not possible in the past, which provides the Islanders with greater assurance that their environmental exposures are within acceptable limits. The new technology also costs less than previous methods.

Program Manager: Tom Bell

PALOMARES, SPAIN MEDICAL SURVEILLANCE AND ENVIRONMENTAL MONITORING PROGRAM

The Palomares, Spain Medical Surveillance and Environmental Monitoring Program supports the OHP mission to understanding the health consequences of exposures to ionizing radiation and the health impacts of DOE operations on communities. Medical surveillance improves the understanding of the health effects of nuclear weapons production, testing, and use, and environmental monitoring information can be used to expand the state of knowledge concerning plutonium pathways and adverse effects. This program produces information to fill a major gap in the world's knowledge of radiation effects, and will provide guidance for radiation protection and public health policies near former weapons production facilities.

On January 17, 1966, two U.S. Air Force planes collided during a mid-air refueling operation over the southeast coast of Spain. One of the planes carried four nuclear weapons that fell from the fuselage on impact. Although parachutes deployed for two of the weapons which were later recovered intact, the other two weapons exploded upon impact in the fields near the village when their parachutes failed to deploy. The resulting non-nuclear detonations resulted in the dispersal of plutonium and the contamination of 558 acres at Palomares, a hamlet of 1,500 residents. Within weeks of the accident, the U.S. Department of Defense remediated the site. Since that time, DOE has funded a portion of the

cost of medical surveillance to the residents, the cost of environmental monitoring, and provided scientific and technical assistance.

In 1998, DOE and Centro de Investigaciones Energeticas Medioambientales y Tecnologicas (CIEMAT), DOE's Spanish counterpart, conducted a program review to help identify future research. As a of the program review, CIEMAT has begun to collect data needed for a quantitative health risk assessment. This includes refining the estimates of plutonium levels in soil, determining the amount of uranium in soil, and assessing the risk of inhalation of americium.

GOALS:

- Perform clinical examinations and radio-bioassays of plutonium and americium collected from 24-hour urine samples of 150 residents from Palomares.
- Perform sampling, analysis, and measurements of plutonium and americium in air, soil, food crops, wild vegetation, milk, and other products.
- Perform a preliminary estimate of current annual doses to people living and working in Palomares as part of the quantitative health risk assessment.
- Perform separation and identification of plutonium hot particles in soils.

ACCOMPLISHMENTS:

- Continued activities related to personal radiological surveillance and environmental monitoring.
- Emphasized research on the migration and analysis of plutonium in soil samples from the area where residual contamination exists.
- Conducted medical examinations on 150 residents from Palomares and analyzed the amount of plutonium in urine collected over a 24-hour period; no significant findings related to radiation exposure were found.

Program Manager: Barry Fountos

ANCILLARY PROGRAMS

Ancillary programs support core programs by enhancing and enabling their implementation.

RECORDS PROGRAM

Records are an essential source of information about DOE. Records, however, are useless unless intellectual control and access to them are maintained. The records program supports OHP's mission by locating records, by maintaining intellectual control over those records, and by facilitating access to them. The OHP Records Program ensures the preservation of DOE records useful for health research and facilitates the access for health researchers.

Epidemiological Records Reviews – This project refines the broad DOE moratorium on the destruction of health related records. The project removes from the moratorium, records that are not useful for health research, thereby, reducing records storage costs and ensures that useful records are preserved.

Beryllium Records Project – This project asserts intellectual control over legacy beryllium records to support the document and information needs of OHP and other ES&H offices for beryllium rulemaking and compensation legislation, and to allow ES&H to answer more effectively questions from the General Accounting Office (GAO), specific congressmen, and the public.

Oak Ridge Records – This project facilitates the transfer of historically valuable records to the National Archives. Many of these records are on environment, health, or safety topics.

Site Closure – This project ensures that records of closed out sites, which are useful for health studies, are preserved and that intellectual control over them is maintained.

GOALS**:**

Epidemiological Records Reviews

- Review epidemiological records held in two Federal Records Centers to help reduce storage costs.
- Complete the epidemiological records review of Hanford site records.
- Conduct DOE field site visits to review records assigned retention periods under new schedules.

Beryllium Records Project

- Create electronic guide to beryllium records and load database of documents catalogued to date on Web.
- Conduct site visits to gather more documents including reference documents and identify and describe collections containing beryllium information.

Oak Ridge Records

- Close out the project by transferring the last boxes of records in DOE custody to the National Archives.

Site Closure

- Work with sites slated for closure and DOE records managers to ensure that health-related records are preserved and accessible.
- Review epidemiological records at Mound and Fernald, as part of site close out activities.

ACCOMPLISHMENTS**:**

Epidemiological Records Reviews

- As of April 1999, OHP staff had removed 22,169 cubic feet of records from the moratorium which reduced OHP's storage costs.
- Completed nine site visits in FY 2000.
- Completed 27 reports on records review, with additional recommendations for removing more material from the moratorium.

Beryllium Records Project

- Collected, organized, and indexed more than 500 key documents pertaining to the DOE beryllium legacy.
- Collected finding aids and completed approximately 40 series descriptions covering thousands of cubic feet of DOE and DOE contractor records which contain further information on beryllium.
- Created lists of beryllium vendors and sites, used for the beryllium rule making and the workers compensation legislation.
- Completed four site visits to research site beryllium records in FY 2000.

Site Access

- Participated as a subject matter expert in periodic conference calls held to facilitate access of NCEH contractor researchers to LANL records.

Program Manager: Roger Anders

INFORMATION MANAGEMENT

The OHP web site allows the office to share information related to its programs. In this regard, OHP is able to collect health-related information and provide it in a straightforward manner to the DOE workforce and surrounding communities, thereby, continuing DOE's policy of openness.

OHP has established an Information Management Team to work with ES&H's Office of Information Management (IM) to ensure the highest quality, state-of-the-art information management systems, tools, and programs that will allow our office to effectively communicate, share information, and respond to customers.

The Information Management Team's mission is to manage the informational needs of OHP. This will involve defining, addressing, and coordinating the needs of OHP with IM and others as needed. Periodically, the team will review

and update these needs and work together to ensure that the technology we are using will best meet these needs at both the programmatic and individual levels. In this respect, informational needs are defined as data, technology (hardware, software, web sites, databases), and individual workstations. The team is also to serve as a clearinghouse of information to OHP by bringing new initiatives and technological changes to the organization.

GOALS**:**

- Create a new web site to reflect the reorganization of our office in July 2000.
- Complete the following databases:
  - OHP Portfolio Management database
  - Human Reliability Program (HRP) Designated Physicians & Psychologists database
  - Marshall Islands Dose Data database
  - Decision on Medical Surveillance Information System (MSIS)
- Maintain current databases:
  - Marshall Islands Historical Documents database
  - OHP Document Catalog
  - Beryllium Historical Index

Program Manager: Mary Fields

COMPREHENSIVE EPIDEMIOLOGIC DATA RESOURCE

The Department has a strong commitment to greater openness in its operations and to the public's right to know about worker and community health risks. The Comprehensive Epidemiologic Data Resource (CEDR) project supports these goals by serving as the Department's public-use repository of data collected for DOE-sponsored epidemiologic, environmental, and related health studies.

De-identified study data are incorporated into CEDR as soon as studies are completed and researchers have provided files and documentation. Most of CEDR's large collection pertains to occupational epidemiologic studies conducted at many nuclear weapons plants, such as Hanford, Rocky Flats, Oak Ridge, and Savannah River. They include data from cohort and case-control design studies, many of which have detailed individual-level exposure measurements. Additionally, CEDR presents data from studies of past releases from DOE sites that may have impacted the health of nearby populations, as well as data from classic studies of radiation health effects, such as those of the Japanese atomic bomb survivors and the radium dial painters. The sharing of these data, at no cost to the user, encourages independent scientific inquiry and diversity of analyses. More information or a CEDR catalog can be obtained online at http://cedr.lbl.gov.

GOALS:

- Continue CEDR's successful program of facilitating the public's access to data by refining its online capabilities and responding to the hundreds of requests made of its web site each day.
- Increase visibility of CEDR by promptly announcing availability of new data file sets and communicating more frequently with users.

ACCOMPLISHMENTS:

- Expanded CEDR's holdings by incorporating data and documentation for three large data file sets.
- System hardware, and associated software were reconfigured to support the interactive, geographical display of dose reconstruction data.
- The CEDR Bibliographic File Set database was implemented and linked to other CEDR structured documentation. It provides author, title, and other keyed access to core CEDR-related literature.
- CEDR's web presence, called CEDRView, responded to an average of 5,000 requests per month.

Program Manager: Barbara Brooks

RADIATION EMERGENCY ASSISTANCE CENTER/TRAINING SITE

DOE develops, produces, and maintains nuclear materials and radiation generating devices as a major part of its strategic mission. Accidents with these materials or machines can result in catastrophic personal and/or area consequences, such as the 1986 Chernobyl incident. Hundreds of less publicized, but very serious radiation accidents have happened, many at DOE facilities. Given this reality, the Department must be adequately prepared at all times to deal with radiation emergencies and their consequences.

The Radiation Emergency Assistance Center/Training Site (REAC/TS) program has been a significant part of DOE's radiation protection effort for over 30 years. This program provides state-of-the-art medical assistance, dosimetric assistance, and training efforts responsive to the Department's radiation accidents as its first priority; and, secondarily as a service on a worldwide basis. Personnel experienced in clinical radiation medicine are available on a 24-hour basis to evaluate patients directly or in consultation with their physicians, to provide clinical care management, and medical follow-up of survivors of serious radiation accidents. About 60 calls per year request this specialized assistance. REAC/TS personnel can treat workers or members of the public exposed to radiation or radioactive materials with appropriate conventional and developmental protocols. From REAC/TS research and registry of more than 400 past accident histories and pertinent clinical data

from over 133,000 exposed individuals, it has been able to study the course of radiation induced pathology to suggest improvements for specialized treatment protocols. In this context, the group conducts clinical trials and maintains a selected inventory of chelating agents under Investigational New Drug Applications (INDA) as ameliorative options. Over 5,000 physicians, nurses, and emergency personnel have received REAC/TS training in the medical aspects of radiation accident preparedness and management. REAC/TS unique expertise in radiation medicine is sought frequently by program offices in DOE and in other Federal agencies.

GOALS:

- Provide state-of-the-art expertise in radiation medicine.
- Continue to maintain and improve the REAC/TS radiation accident registries.
- Maintain DTPA (diethylenetriaminepentaacetic acid) INDs and increase DTPA inventories.
- Establish distribution of Prussian Blue to co-investigator physicians.
- Continue REAC/TS educational and instructional programs.
- Improve radiation treatment options through research and further clinical study.

ACCOMPLISHMENTS:

- Provided timely medical consultation and services to requests for assistance.
- Established and maintained a comprehensive radiation accident register.
- Enlisted and re-supplied 44 co-investigators with fresh DTPA for the IND program.
- Provided DTPA treatments to 630 individuals (4,668 doses).

Program Manager: Don Lentzen

HEALTH EFFECTS POST-DOCTORAL FELLOWSHIP PROGRAM

In 1996, OHP initiated the DOE Health Effects Postdoctoral Fellowship Program in response to the concern expressed by government agencies and the academic community that there is insufficient technical expertise in the radiation sciences due to the retirement of scientists with knowledge and interest in this area. A 5-year cooperative agreement was awarded to the University of Pittsburgh in 1997 to stimulate the development of a center of excellence in the radiation sciences. Fiscal year 2001 is the final year of the program, which is located in the Department of Environmental and Occupational Health of the University of Pittsburgh Graduate School of Public Health. The program provides fellows with a 2-year sequence including any needed course work, in-house laboratory rotations, and a year of field experience at domestic or international sites of interest to DOE. Areas of

concentration include radiation epidemiology and biostatistics, health physics and radiobiology, biological dosimetry and biomarker development and application, and occupational medicine.

Goals:

- Be a catalyst for training a new generation of radiation scientists needed to inform important future policy decisions and regulatory actions.
- Provide financial support and meaningful second-year placements for the fellows remaining in the program (final year goal).

Accomplishments:

- By the end of FY 2001, 16 fellows will have participated in the program at a total final cost of $2.8M.
- Ten program "alumni" are employed in areas that are or will contribute to the mission of DOE and the radiation sciences in general. These include positions related to radiation and other health effects policy (3), government and university research (3), radiation dosimetry (2), and university teaching (2).
- Lessons learned from this program can serve as the basis for future training programs funded by DOE.

Program Manager: Joe Weiss

STAFF

BIOGRAPHIES

KAROLINE M. ANDERS, J.D. came to DOE in 1994 to work on the Human Radiation Experiments Project and from there moved to the Office of Health Programs. Since coming to DOE, she has focused her time on activities and issues pertaining to records preservation and access. She received her law degree from Boston University in 1993 and is admitted to the bar in New Hampshire, New York, Massachusetts, and the District of Columbia. During law school, she served as an editor on the Boston University International Law Journal. Prior to law school, she worked for a library automation company where she wrote and edited Responses to Requests for Proposals. In addition, she has experience as a journalist, having published articles in the Syracuse Herald-American, the Quincy Patriot Ledger and other newspapers. Her academic background includes an undergraduate degree from Syracuse University in Journalism and Political Science.

ROGER M. ANDERS, PH.D., has worked at DOE since 1972 and with the Office of Health Programs since 1997. He is program manager for activities and issues

pertaining to records preservation and access. Prior to his work in the Office of Health Programs, he was a member of the senior staff of the DOE Human Radiation Experiments Project and an Historian/Archivist in the DOE Headquarters History Office. He has published a book and articles on DOE history and has extensive experience in managing archives and directing searches through DOE records. He received his doctorate in History from the University of Maryland.

SUE A. ANDERSON has worked at DOE since 1989 and with the Office of Health Programs since its formation in 1990. Ms. Anderson is responsible for day-to-day administrative operations, including customer relations, procurement, performance monitoring, and personnel. She designs and implements office processes for managing grants and fellowships; measuring office and contractor performance; maintaining personnel performance reviews, and monitoring office expenditures. Ms. Anderson implements office-wide process improvements, including transition to an electronic paperless data management system resulting in improved communications and reduced operating costs. She works together with national and international representatives from Government, academia, and business, to plan and run domestic and international meetings, conferences, and workshops to promote collaboration and stimulate involvement in radiation health sciences. Her previous work at DOE includes serving as a secretary in the Office of Health and Environmental Research.

CLAUDIA L. BEACH, BA, RN, COHN, is the program manager for the Russian Programs within the Office of Health Programs. She has more than 25 years experience in occupational health and safety, medically-related litigation support activities, and training. While at DOE, she has also served as program manager for the DOE-sponsored HHS National Center for Environmental Health's dose reconstruction studies, and as the program manager for the beryllium registry. Prior to coming to DOE, Ms. Beach served as occupational health services manager with Consolidated Diesel Company (a Cummins Engine-J.I. Case Company joint venture), as occupational health charge-nurse with the U.S. Public Health Service at the White House Complex, and as an occupational health nurse for Chrysler Corporation for more than 10 years. In addition, she has served as Repetitive Stress Injury Prevention coordinator for The Washington Post, and as an event nurse for The Washington Convention Center. She graduated from the Federal Executive Potential Program, holds a B.A. in Management from National Louis University, and is board certified in occupational health nursing.

R. THOMAS BELL, III, M.S., is a health physicist with 37 years of experience in radiological control, radiological health, and ionizing radiation health effects applications and programs. As the Marshall Islands Program Manager, Mr. Bell coordinates and facilitates the programs that are dedicated to providing the Government of the Republic of the Marshall Islands special

medical care for exposed populations; environmental monitoring of contaminated atolls; and mitigation strategies and techniques to assist in the resettlement of Marshall Islands populations whose homelands are still residually contaminated from fallout from the U.S. atmospheric nuclear weapons tests. He assists the office in developing dose reconstruction capabilities and dose assessment techniques that help to reduce uncertainties as to dose received. Mr. Bell's previous experience in radiation effects and control includes active duty U.S. Navy assignments in these disciplines while serving as a Medical Service Corps officer. Mr. Bell received his B.S. in Biology from Denison University and his M.S. in Physiology and Biophysics at Georgetown University.

MOHANDAS BHAT, D.D.S., DR.P.H., is a Senior Science Advisor with a broad background, training, and many years of experience in various health disciplines, including dentistry, orthodontics, public health, epidemiology, and medical informatics. He is fluent in Portuguese and Hindi. His clinical, teaching, research, and administrative experience includes serving in various capacities on dental school faculties in India, Brazil, and the United States. He has been a consultant for Project HOPE in Brazil, Colombia, and Portugal, as well as a consultant for the Pan American Health Organization in Washington, D.C. Before moving to DOE in 1994, Dr. Bhat served as an intramural researcher in the Epidemiology and Oral Disease Prevention Program, and later as the Director of the extramural program in Craniofacial Development and Disorders, at the National Institute of Dental and Craniofacial Research, National Institutes of Health. In addition to his degrees in dentistry and orthodontics from India, Dr. Bhat has Master's level training in Public Health and Medical Informatics from the University of Pittsburgh and Case Western Reserve University, respectively. He also holds a Doctorate in Public Health from the University of Michigan.

BARBARA G. BROOKS, M.S., is a radiological protection specialist with nearly 30 years of service in the Federal Government. Having broad experience in project and data management, she began her tenure at DOE in 1990 to develop a public-use database of information generated during decades of DOE-supported epidemiologic studies of nuclear workers. Ms. Brooks continues as manager of this successful project, called the Comprehensive Epidemiologic Data Resource, which is accessible world-wide. She also manages a university research program on the biokinetics and dosimetry of the actinide elements in humans. Some of her other responsibilities include DOE representation and consultation to State and Federal agencies performing historical community exposure assessments near DOE sites. Ms. Brooks' prior experience includes 20 years with the Nuclear Regulatory Commission, where she published numerous reports that analyzed data on occupational radiation exposures. She received her master's degree in physics from the University of Tennessee and is a member of the Health Physics Society.

MARY L. FIELDS, B.A., began working at DOE in 1999 and has been in the Office of Health Programs since June 2000. Ms. Fields serves as Program Manager for the EH-6 Information Management Team; performs the webmaster functions for the office; maintains certain databases (which currently are the EH-6 Information Directory database, the OHP Document Catalog database, and the OHP Portfolio Management database); and provides administrative support to the office. Ms. Fields received her Bachelor of Arts degree in Psychology from the University of Maryland at College Park in 1982.

BARRETT N. FOUNTOS, M.S., has over 21 years of public and private sector experience in occupational and environmental epidemiology. He serves as Program Manager for radiation health effects research related to Chernobyl and Spain. Mr. Fountos has basic conversational skills in French, Spanish, Russian, and Greek. Prior to joining the Office of International Health Programs, Mr. Fountos served as an epidemiologist in DOE's Office of Epidemiologic Studies where he facilitated researcher access to site-specific data needed for conducting health studies at former nuclear weapons facilities. At the Occupational Safety and Health Administration, Mr. Fountos developed regulations that protect workers from exposure to toxic substances. At the Environmental Protection Agency, he developed regulations that require the testing of existing products for adverse health effects. His work also includes designing a historical prospective study of former residents of a Superfund site in Puerto Rico. Mr. Fountos received his Bachelor's degree in Biology from Case Western Reserve University and his Master's degree in preventive medicine from the Ohio State University College of Medicine.

FRANK HAWKINS, B.S., Chief Operating Officer, Office of Health Programs. Before his current position, Mr. Hawkins was Director of DOE's Office of International Health Programs (IHP) from 1995 until July 2000. Through its portfolio of radiation health studies and medical/environmental surveillance in Europe, Japan, and the Marshall Islands, IHP worked to define the relationship between ionizing radiation and its effect on human health. From 1990 until 1995, Mr. Hawkins was Director of the Division of Nuclear Safety Policy. The division developed and managed DOE's nuclear safety program. In addition to his responsibilities as Director, Mr. Hawkins authored the Department of Energy's quality assurance order (5700.6C) and rulemaking (10 CFR 830.120) and the International Atomic Energy Agency's quality assurance code (50-C-QA). Used by the Department of Energy and at nuclear facilities in over 100 countries, these standards focus on facility and personnel performance, instituting a quality culture that reduced operating costs while improving facility safety and reliability. Mr. Hawkins was also employed by the Nuclear Regulatory Commission from 1978 until 1990. He was stationed at NRC Headquarters in Washington for 3 years and the NRC's Chicago Regional Office for 9 years. In Washington, Mr. Hawkins set national quality assurance policy for the commercial nuclear industry and oversaw implementation of the Commission's quality assurance inspection program for the NRC's five regional offices. In

Chicago, Mr. Hawkins managed the Region's reactor inspection program for plant maintenance, surveillance, testing, non-licensed personnel training, design, modifications, and quality assurance. Mr. Hawkins also worked for Bechtel Power Corporation at the Hope Creek Nuclear Generating Station in New Jersey and as an employee of the Tennessee Valley Authority at Watts Bar Nuclear Generating Station. Mr. Hawkins received his Bachelors of Science degree in civil engineering from the University of Missouri at Rolla. He is a registered Professional Engineer in the State of Illinois.

WILLIAM D. JACKSON, M.A., has more than 39 years of experience in international relations. For the past 19 years, Mr. Jackson has been stationed at Hickam Air Force Base, Hawaii, supporting DOE's logistical operations in the Central Pacific and Marshall Islands. For the last 8 years, he has served there as the Office of Environment, Safety and Health representative, and Manager of Field Operations for the Marshall Islands Program. Fluent in several languages, including Marshallese, Mr. Jackson has an extensive cross-cultural and intergovernmental affairs background. Previously, he worked for DOE's Nevada Operations Office, handling logistical and operational planning functions for the Pacific medical, health science, and environmental programs, and emergency planning for Hawaiian area support. Mr. Jackson worked for more than 12 years in the Western Pacific for the Department of the Interior and the Trust Territory of the Pacific Islands Government as a community development officer, housing programs specialist, and as Federal Grants coordinator. He has also served and worked for the Peace Corps in the Caribbean and Africa.

MARSHA A. LAWN is the program manager for all Department of Heath and Human Services' (HHS) activities at DOE sites under the Memorandum of Understanding (MOU) between the Department of Energy (DOE) and HHS. She is responsible for all DOE site-related activities under the MOU and works closely with operations and area offices to coordinate health activities. Previously, Ms. Lawn was program manager of the Agency for Toxic Substances and Disease Registry (ATSDR) program and has now taken on the additional responsibilities of the National Center for Environmental Health and the National Institute for Occupational Safety and Health. Ms. Lawn is a graduate of the USDA Graduate School's New Leader Program, has training in public health, environmental management, and budget administration. She has been with DOE since 1987.

DONALD E. LENTZEN, PH.D., received his M.S. in Public Health from the University of North Carolina and a Ph.D. in Microbiology from the University of Texas. Since joining DOE, Dr. Lentzen has worked with the Office of Health Programs to compile information for epidemiology programs, to respond to workers with health concerns, and to improve delivery of occupational medical services in the DOE complex. His areas of involvement include assessment of occupational medicine facilities and services, development of performance

indicators, and review of DOE contract provisions for environment, safety and health. He has also been involved in the worker's advocacy initiative, the use of chelating agent DTPA at DOE facilities, and in program management for radiation accident response.

MARJORIE A. LENTZEN first began her Federal civil service career upon graduation from the Philadelphia School of Office Training in 1966. She has been working at DOE since 1989 with more than 9 years in the Office of Environment, Safety and Health. Currently, Ms. Lentzen provides administrative support to the reorganized Office of Health Programs while also serving as the training coordinator for this office's 30-member staff.

KENNETH O. MATTHEWS is program manager for the DOE Human Reliability Programs (medical and psychological elements), Contractor Employee Assistance Programs (EAP), medical and behavioral elements, DOE workplace violence, and policy development and review for related programs in these areas. His education background includes an undergraduate degree in psychology and graduate degrees in counseling/psychological assessment, organizational development/management science from the University of Missouri-KC and George Washington University. Presently, he is a doctoral candidate in counseling and psychological assessment at George Washington University. Prior work experience included Director of a Counseling Center and Director of an EAP.

RUTH NETA, PH.D., is a Senior Science Advisor with over 30 years of experience in the fields of immunology, hematology, and radiation biology. Since joining the office in 1994, Dr. Neta has provided the office with scientific expertise in the field of the health effects of ionizing radiation, and more recently immunology as related to chronic beryllium disease. Her responsibilities include ensuring high scientific standards for the existing projects and fostering development of innovative programs. Before joining the office, she worked at the University of Pittsburgh Medical School, and at the Armed Forces Radiobiology Research Institute, where she established a multidisciplinary program studying the role of cytokines in protection and damage by radiation of the immune, hematopoietic, gastrointestinal and endocrine systems. These studies led to a number of findings of clinical utility. She has more than120 original publications and reviews in the fields of immunology, hematology, endocrinology, and radiobiology. She was elected a Fellow of the American Academy of Microbiology (1987), has served as a member of study sections and program review committees, as an officer of scientific societies, and serves as member of editorial boards of scientific journals, and as an Adjunct Professor at the Department of Microbiology, George Washington University Medical School. She speaks Russian, Polish, and Hebrew. Dr. Neta received her M.S. in Immunology from the University of Tel Aviv and a Ph.D. in Microbiology/Immunology from the University of Notre Dame.

JANET NORMANDY, PH.D., holds an M.S. and Ph.D. in biochemistry from George Washington University and a B.A. in psychology from Hunter College. She has served as a toxicologist with the Office of Health Programs for the last 10 years. Before joining DOE, she spent several years in the private sector where she served as the Director of Environmental Studies and functioned as the Section Manager for a group of biomedical and environmental scientists that was responsible for evaluating the environmental and health effects of exposure to various chemicals. Dr. Normandy coordinated the preparation of documents that synthesized and evaluated the available literature, and when appropriate, calculated acceptable levels of human exposure to those chemicals. She is currently the DOE Program Manager for the Rocky Flats Former Radiation Worker Medical Surveillance Program.

GERALD R. PETERSEN, PH.D., is a senior epidemiologist. From 1989 through 1990, he served on the DOE task force that established the Office of Health Programs. He was the program manager for health studies of DOE contractor employees conducted by the National Institute for Occupational Safety and Health through calendar year 2000. Dr. Petersen has more than 25 years of experience in the application of epidemiology to public health issues. He has worked in a state health department and held academic positions at three universities where he taught public health courses. He has published scientific studies about cancer patterns, occupation and cancer, and occupational health surveillance. Dr. Petersen received his doctorate in epidemiology and international health from the University of Washington in 1973. He is a Fellow of the American College of Epidemiology. Dr. Petersen's professional goal is to bring his experience and skills together to help achieve the DOE corporate goals for environment, safety, and health.

BONNIE S. RICHTER, M.P.H., PH.D., is a senior epidemiologist in the Office of Health Programs and has been a member of the office since its establishment in 1990. Dr. Richter has over 13 years experience in conducting epidemiologic studies among residents of communities potentially exposed to toxic wastes or radionuclides and has written many papers in this area. Dr. Richter's professional training is in occupational epidemiology, the assessment of adverse health effects associated with occupational exposures. She provides technical expertise to the epidemiologic surveillance program, which monitors the health of the workforce at participating DOE sites. Dr. Richter is responsible for the conduct of disease outbreak investigations among DOE workers. She is also responsible for the implementation of DOE's Beryllium Registry program. Dr. Richter has authored many articles that explain the results of epidemiologic studies for DOE workers and has taught epidemiologic methods to diverse audiences, from graduate programs to community groups. She serves on several interagency committees, including the President's Task Force on Environmental Health and Safety Risks to Children and the Federal Interagency Working Group on Women's Health and the Environment. Prior to joining DOE, Dr. Richter served as an epidemiologist at the Agency for Toxic

Substances and Disease Registry, Atlanta, Georgia. She received her doctorate in epidemiology from the Johns Hopkins School of Hygiene and Public Health.

CLIFTON H. STRADER, PH.D., epidemiologist, has been a member of the Office of Health Programs since its establishment in 1990. He has done extensive work in the development of occupational health surveillance methods. He currently manages the Epidemiologic Surveillance Program, monitoring occupational illness and injury among more than 60,000 DOE contractor workers at 11 sites and facilities. Dr. Strader is responsible for the development of epidemiologic surveillance reports and has lectured on various health and safety issues to numerous audiences including DOE workers, site occupational medicine staff, line management, and organized labor. He provides technical support in the conduct of outbreak investigations and provides guidance and consultation in the Department's ongoing evaluation and redesign of approaches to integrate health, safety, and environment data analysis. He also provides subject matter expertise to the office's Former Worker Medical Surveillance Program and to the evaluation of the pilot Medical Surveillance Information System. He received his doctorate in epidemiology from the University of Washington School of Public Health.

KATHLEEN TAIMI, M.S., M.A.T., is a Senior Policy Advisor and Program Manager for the DOE Former Worker Medical Surveillance Program. Ms. Taimi has over 25 years experience in environmental and health programs. Since joining DOE in 1986, she has held several positions in the Office of Environment, Safety and Health, including the Director of the Office of Environmental Compliance and Senior Policy Advisor to the Assistant Secretary for Environment, Safety and Health. Before moving to DOE, Ms. Taimi worked at the Environmental Protection Agency Headquarters' Superfund Program, and in the Enforcement Division of EPA's Regional Office in Atlanta, Georgia. While working at the EPA Regional Office, she helped to implement one of the first Federal programs to respond to community health concerns regarding contamination of drinking water by toxic hazardous wastes. In addition to Federal service, Ms. Taimi has worked in health and environmental programs for the State of Tennessee Department of Public Health, Vanderbilt University, and the State of Virginia Water Control Board. While employed by Vanderbilt University, she first assisted industries to solve industrial waste problems, and later she lived and worked in Appalachia to organize and provide free health screenings to residents of rural mining communities. Ms. Taimi received a Bachelor of Science degree in biology from the University of Richmond, and a Master of Science degree in Environmental Engineering from Vanderbilt University. She also earned a Master of Arts in Teaching at Vanderbilt University.

PAUL F. WAMBACH, B.A., is certified in the Comprehensive Practice of Industrial Hygiene by the American Board of Industrial Hygiene. His education includes a B.A. in biology from the University of Minnesota and course work in environmental health at the University of Minnesota School of Public Health.

Since joining the Office of Health Programs, Mr. Wambach has worked on the beryllium worker and radiation worker health surveillance projects. Mr. Wambach is a member of the American Industrial Hygiene Association Occupational Epidemiology Committee. During prior assignments at DOE, Mr. Wambach pursued his industrial hygiene engineering interests through development of nuclear air-cleaning standards and by participating in the American National Standards Institute Respiratory Protection Committee.

JOSEPH F. WEISS, PH.D., with many years of experience in radiobiology and cancer research, is Program Manager for the Japanese A-Bomb Survivor Life-Span Studies Program and the DOE's Radiation Health Effects Post-doctoral Fellowship Program at the University of Pittsburgh. Dr. Weiss worked for 20 years at the Armed Forces Radiobiology Research Institute, where he managed research projects in various areas, including radiation biochemistry, pharmacologic protection against radiation, biochemical and clinical indicators of radiation exposure, tumor markers, lipid peroxidation, and antioxidants. He also served as Research Requirements Administrator, promoting alignment of research projects with customer needs. Before working for the Federal Government, Dr. Weiss was on the faculty of New York University, where he did research on lipid biochemistry of brain tumors. His interest in this area developed from 2 years of postdoctoral training at the University of Milan and from his graduate research on cholesterol metabolism at Ohio State, where he received his M.S. and Ph.D. degrees in physiological chemistry. Other activities have included terms as President of the Oxygen Club of Greater Washington, Visiting Professor at the University of Pisa, and member of the editorial board of the International Journal of Radiation Biology. He has written more than 90 scientific articles and has co-edited 3 books on radioprotection and treatment of radiation injuries.

ELIZABETH P. WHITE, M.B.A., has 11 years of work experience in human resources, training, and health studies program administration. Ms. White has worked in the Office of Health Programs for 5 years, first as a member of the Japanese A-Bomb Survivor Health Studies Program, then as the DOE program manager for work conducted under the auspices of the U.S. - Russian Joint Coordinating Committee for Radiation Effects Research, and currently as the beryllium program manager. Her academic background includes an undergraduate degree from Bucknell University in Japanese and international relations and an M.B.A from Northwestern University.

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